

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/016809

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| <b>A. CLASSIFICATION OF SUBJECT MATTER</b><br>Int.Cl. <sup>7</sup> <b>G09F9/30, H05B33/14, H01L29/786, H01L21/288, H01L21/3205</b><br>According to International Patent Classification (IPC) or to both national classification and IPC   |  |   |
| <b>B. FIELDS SEARCHED</b><br>Minimum documentation searched (classification system followed by classification symbols)<br>Int.Cl. <sup>7</sup> <b>G09F9/30, H05B33/10-33/28, H01L29/786, H01L21/288, H01L21/3205</b><br><br>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched<br><b>Japanese Utility Model Gazette 1922-1996, Japanese Publication of Unexamined Utility Model Applications 1971-2005, Japanese Registered Utility Model Gazette 1994-2005, Japanese Gazette Containing the Utility Model 1996-2005</b><br><br>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)   |  |   |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>   |  |   |
| Category*   | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.   |
| Y   | JP 7-312290 A (NEC CORPORATION) 1995.11.28<br>paragraph [0037] - [0047], figs. 2, 3<br>& US 5747930 A1 & EP 684753 A1                                  | 1-13, 20-33   |
| Y   | JP 11-112001 A (SEMICONDUCTOR ENERGY<br>LABORATORY CO., LTD.) 1999.04.23<br>paragraph [0136] - [0142], fig. 10<br>paragraph [0174]<br>paragraph [0065] | 2, 7-13, 20-32<br>3, 4<br>5, 6  |
| A   | paragraph [0136] - [0142], fig. 10<br>& US 6013930 A1 & US 2001-049163 A1  | 14-19, 34, 35   |
| Y   | JP 2003-058077 A (FUJI PHOTO FILM CO., LTD.)<br>2003.02.28<br>whole document<br>(family:none)  | 1-13, 20-33   |
| <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.  |  |   |
| <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p> |  |   |
| Date of the actual completion of the international search<br><b>04.02.2005</b>  |  | Date of mailing of the international search report<br><b>01.3.2005</b>                  |
| Name and mailing address of the ISA/JP<br><b>Japan Patent Office</b><br>3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan  |  | Authorized officer<br><b>Hajime Kitagawa</b><br>Telephone No. +81-3-3581-1101 Ext. 3274 |
|   |  | <b>2M 9804</b>  |

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages            | Relevant to claim No. |
|-----------|---|-----------------------|
| Y         | JP 2000-206509 A (ALPS ELECTRIC CO., LTD.)<br>2000.07.28<br>paragraph [0018]<br>(family:none) | 7, 8, 20-25           |